Village of Ridgefield Park Supplemental CSO Team

Meeting Number 9

Commissioner's Conference Room

Village of Ridgefield Park Municipal Building

September 24, 2019 10:00 AM

Attendees – See attached sign in sheet

Presentation slides attached

Group Meeting Minutes

1. Introductions
    a. Meeting began at 10:00 AM with John Dening welcoming new attendees and introductions.
    b. John Dening opened the meeting with a presentation on food safety, see attached presentation.
    c. John Dening presented a summary of the topics discussed at the previous meeting. John explained the purpose of this meeting and the role of the SCSO team. John opened for questions on prior meeting, but no questions were asked at this time.
    d. John Dening indicated that meeting minutes are posted on the Ridgefield Park website.

2. Presentation by John Dening on the Development and Evaluation of Alternatives Report, see attached presentation.

3. Discussion and Questions – The following outlines questions that were asked during the presentation and the discussions that followed:

    a. Question: How many overflows per year do we average?

        Answer: It varies by years, using the Typical Year the highest individual outfall would be around 53 with the lowest being 12.

    b. Question: Is there any way to test the overflows we had before compared to what we will have after?

        Answer: The effectiveness of the controls is tested in the model using the Typical Year. This serves as the basis of compliance for the LTCP. Throughout the LTCP there will be periodic requirement for compliance monitoring.

c. Question: Where is the treatment for the water?

   Answer: The flow is treated across the river at the BCUA treatment plant in Little Ferry.

d. Question: We share a line with Fort Lee are they also developing a plan? How much flow are they adding and how will this affect us?

   Answer: Fort Lee is also developing a plan and their added flow, if any, will be accounted for in the model.

e. Question: Control Program 2 (CSO storage tanks) facilities are dependent on us acquiring the land?

   Answer: Yes, but most facilities would be below ground, so it may be possible to continue business above ground, or to repurpose the sites.

f. Question: Would the land next to Rt. 80 be a better fit?

   Answer: There's columns, it's next to a highway and it is in a more remote location so it is still on the list as potential land to be used but at the end of the day it will all be dependent on if it could be acquired, pricing and feasibility.

   Clarification on question e: The VFW post building adjacent to Overpeck Creek is owned by the Village and is abandoned.

g. Question: The alternatives pricings we are seeing is just what Ridgefield Park must pay?

   Answer: Yes, the other communities have prepared their own reports which can be downloaded from the NJDEP.

h. Question: What is the annual overflow volume.

   Answer: It is a little over 50 million gallons for the typical year, keep in mind this is mostly for rain water, some sewage and whatever is picked up off the streets.

i. Question: Would Control Program 3 (CSO storage tunnels) follow the railroad right of way?

   Answer: It would be under Industrial Avenue, parallel to the railroad.

j. Question: For anything underground such as the tunnels would there have to be soil investigation?

   Answer: Yes. It is easier to tunnel through rock, so the depth to rock is

important, we would need to know how deep we would have to go to hit rock. If rock is about 50 feet it is probably feasible to place the tunnel in rock. If the depth to rock is deeper like 100 feet or more, it may not feasible and soft ground tunneling which is more difficult would be required.

Comment from Village resident: On the other side of the town to hit rock it was about 175 feet to 250 feet. Not sure what it would be on this side of town, but I would assume it would be similar.

k. Question: You mentioned separation of sewers could bring further costs in the future, doesn't this make it obsolete?

   Answer: Stormwater is a major contributor of pollutants to the watercourse. Currently, the NJDEP requires some level of solids removal. In the future the NJDEP requirements may be stricter depending on regulations. So it is possible that there will be additional costs in the future even if you separate.

l. Question: If we did separate would there be additional costs for links to the new system?

   Answer: You wouldn't be asking individual people to pay for reconnecting their laterals in the street. The cost would be part of the overall project and it would be paid for with taxes or sewer fees.

m. Question: Is the BCUA prepared for the increase in flow from the towns?

   Answer: The might have to expand depending on the increase in flow and if that were the case then the towns would be responsible to pay for that expansion.

n. Question: The end of pipe alternatives would cause the least disruption to the citizens correct?

   Answer: It appears the impacts would be less than working on every street as would be required by sewer separation.

o. Questions: Are the properties in Industrial Avenue the only ones being considered?

   Answer: On the report we showed others, but this seemed to be the most promising candidate based on location. Other factors will play into the final siting.

p. Question from John Dening: What community group meetings could we attend to share this information with people?

Answer from SCSO Team and resident: Is the goal to reach hundreds of people? That is not going to happen at community group meetings.

Response: The idea is to talk to as many people as we can, then those people can talk to other people and the message is spread.

Suggestions: The Village newsletter is a great place to post this information and it would be smart to hold a meeting on the day that all the community groups meet at the municipal building or you can also invite all community groups to one big meeting in the municipal building instead of meeting just one group individually.

q. Question: You said it is likely that with a separation of sewer we will have further costs in the future, but would this be the case with the other alternatives as well?

Answer: With any alternative there is potential for them to come back in the future and make you spend more.

r. Question: What is meant financial capability analysis?

Answer: The DEP doesn't want to bankrupt cities over this, they want cities to spend a reasonable amount. The financial capability analysis compares the costs of alternatives to thresholds set by the EPA to see how much should be spent.

s. One of the SCSO Team members discussed distributing material on CSOs at the Village's street fair. John Dening stressed that public participation is an important part of the process and that it is not limited to the SCSO team. He asked for an email detailing what was done at the street fair, so it could be documented in the upcoming report.

4. John passed around handouts that included the Summary section of the Development and Evaluation of Alternatives Report. He focused on the information that indicated how the rating for each alternative came about. He specifically requested input on the ratings applied to the Public Acceptance. He requested that the attendees will comment on it in the next week or two.

5. Meeting concluded at 11:40 AM.

Village of Ridgefield Park
Supplemental CSO Team
Meeting Number 9 – Alternatives Analysis
Commissioner's Conference Room
Village of Ridgefield Park Municipal Building
September 24,2019; 10:00 AM

Initials	Name	Organization	Email	Phone Number
	John Rolak	Mott MacDonald	john.rolak@mottmac.com	973-912-2521
JRD	John Dening	Mott MacDonald	John.dening@mottmac.com	973-912-2464
	Donna Gregory	Mott MacDonald	donna.gregory@mottmac.com	
FM	Flo Muller	Ridgefield Park Shade Tree Commission	flomart@nj.rr.com	201-814-9019
	Mark Olson	Chairman, Green Team	mark-olson@verizon.net	201-440-5989
	Stephen Quinn	Ridgefield Park Environmental Commission	stephencquinn@aol.com	201-440-5652
LQ	Linda Quinn	Ridgefield Park Environmental Commission	linda.quinn125@gmail.com	201-440-5652
	John Ponticorvo	Wanda Canoe Club	jponticorvo@aol.com	201-803-3643
AOG	Alan O'Grady	Village of Ridgefield Park DPW	aog560@aol.com	201-440-8860
	Mike Monroe	Village of Ridgefield Park DPW	ed81563@gmail.com	
	GERARD GARofalow			201-661-0767 201-440-4684
	Diego Rodriguez	Mott MacDonald	diego.Rodriguez@mottmac.com	973-262-1543

MOTT MACDONALD

Development and Evaluation of Alternative Controls

Village of Ridgefield Park
Supplemental CSO Team

Meeting #9

September 24, 2019

Safety Topic

September is Food Safety Month

Stats

In the U.S.

76,000,000 cases a year

325,000 hospitalized

5,000 deaths

1

Chill

Within 2 hours

40ºF of colder

Thaw in Fridge

2

Clean

Wash hands 20 sec

Cutting boards

Countertops

3

Cook

Check temperature

Stir

Boil – soups, sauces and gravies

4

Separate

Meat

Cutting boards

Shopping Carts

Prevent dripping

http://safetytoolboxtopics.com/

Ridgefield Park Supplemental CSO Team

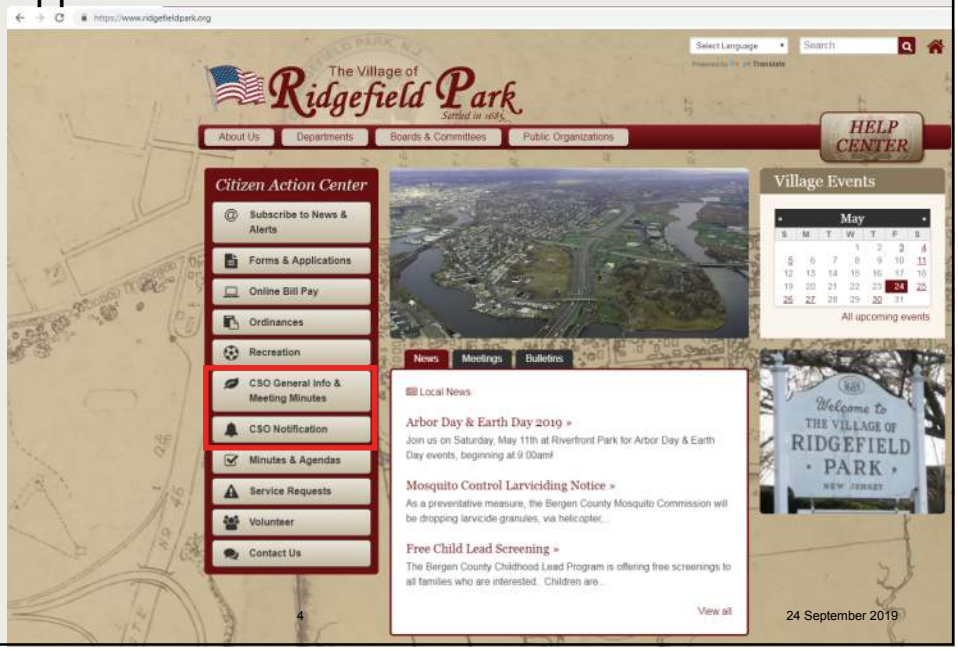
Meeting No. 9 Agenda

Refresher – In meeting #8 we covered:

- Submissions Status
- Public Participation Status
- Development and Evaluation of Alternatives
  - Coordination with BCUA
  - Future Baseline
  - Preliminary Alternatives
- Upcoming Schedule

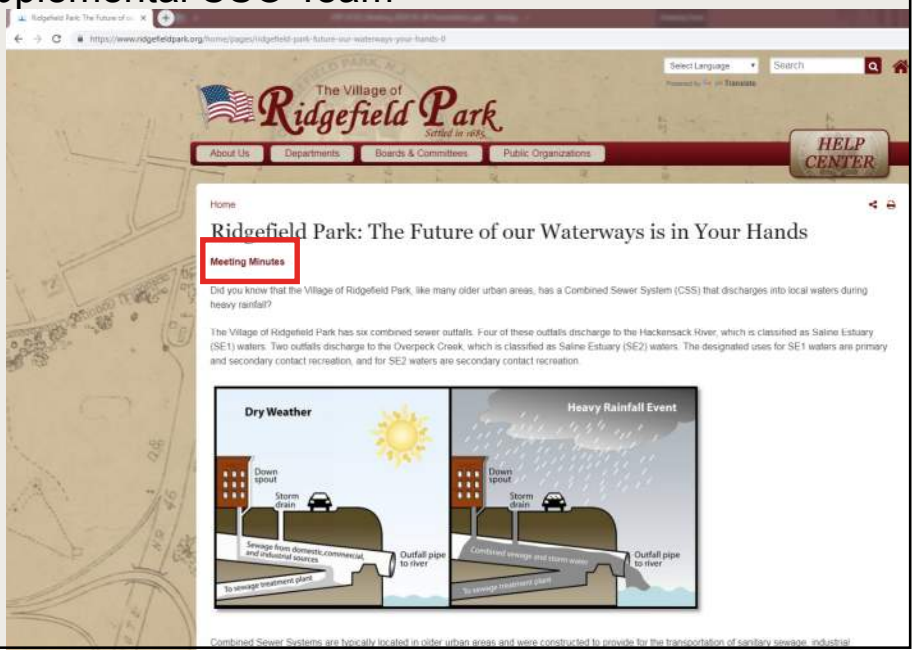
Ridgefield Park Supplemental CSO Team

Meeting Minutes



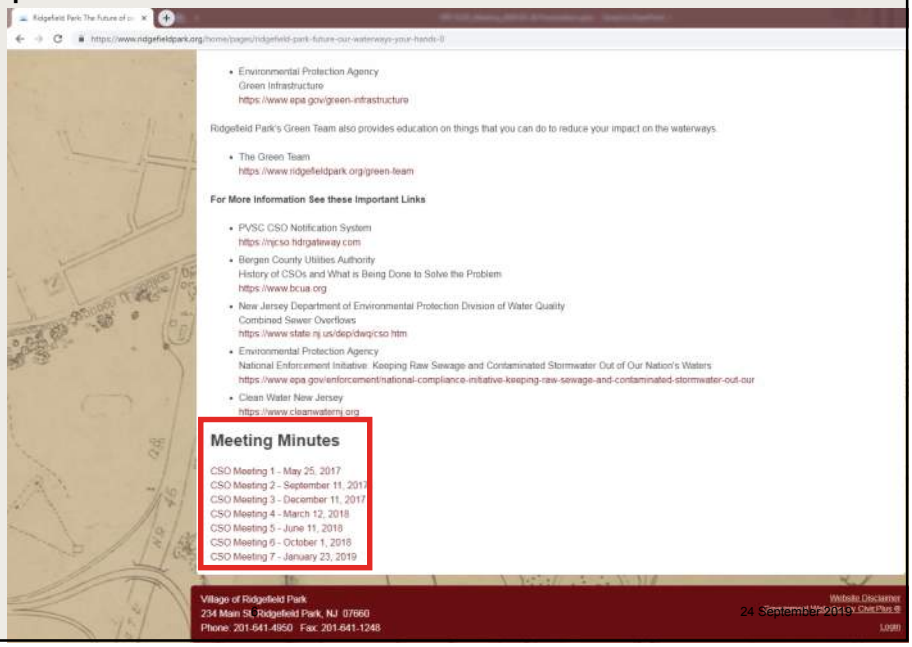
Ridgefield Park Supplemental CSO Team

Meeting Minutes



Ridgefield Park Supplemental CSO Team

Meeting Minutes



Ridgefield Park Supplemental CSO Team

Meeting No. 9 Agenda

- Submissions Status
- Development and Evaluation of Alternatives
  - Control Programs
  - Performance
  - Cost
- Financial Capabilities Analysis
- Selection and Implementation of Alternatives
- Public Participation
- Upcoming Schedule

Ridgefield Park Supplemental CSO Team

DEP review status thru – July 1, 2019 submittals

- **Consideration of Sensitive Areas Report**: Approval Letter dated 4/8/19.
- **Baseline Compliance Monitoring Program Report**: Approval letter dated 3/01/19.
- **System Characterization Reports**: Approval letter dated 03/11/19
- **Public Participation Process Report:** Approval letter dated June 26, 2019.

- **Development and Evaluation of Alternatives Control Report: Submitted June 2019 Currently under review by the NJDEP.**

Ridgefield Park Supplemental CSO Team

What does the permit say about Development and Evaluation of Alternatives?

The permittee shall evaluate a reasonable range of CSO control alternatives that will meet the water quality-based requirements of the CWA

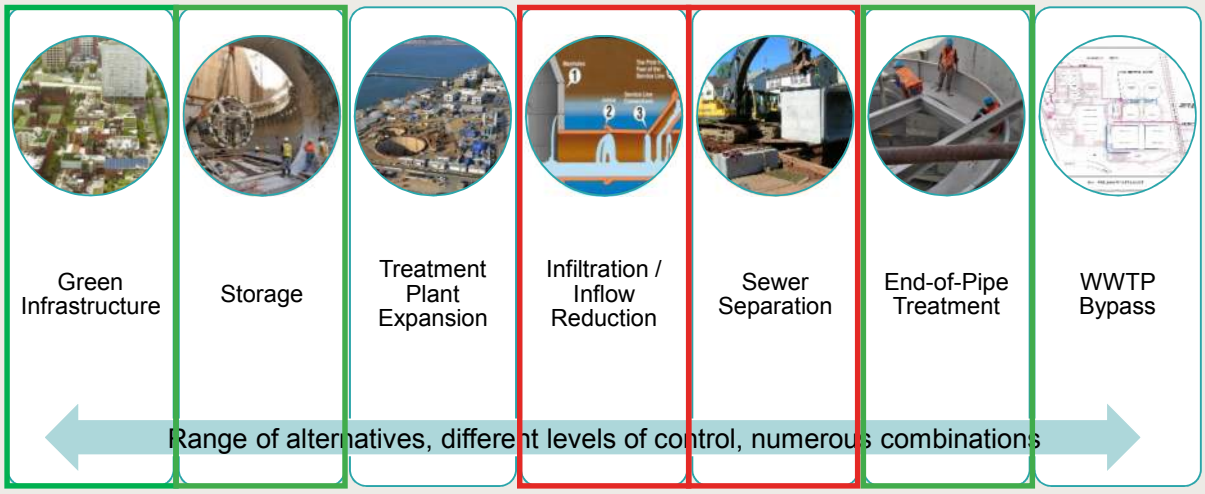
The Development and Evaluation of Alternatives Report shall include a list of control alternative(s) evaluated for each CSO enabling the permittee, …to select the alternatives to ensure the CSO controls will meet the water quality-based requirements of the CWA

The permittee shall evaluate the practical and technical feasibility of the proposed CSO control alternative(s), and water quality benefits and give the highest priority to controlling CSO discharges to sensitive areas

The permittee shall select either the Demonstration or Presumption Approach

Ridgefield Park Supplemental CSO Team

Range of Alternatives



Costing

Cost Estimating Procedures

Order of Magnitude Estimate (Class 5)

Planning Level Cost Estimate – True Cost is within -50%+100% of Estimated Cost

- Capital Costs
  - Design = 10% of Construction Costs
  - Construction Management = 10% of Construction Costs
  - Administrative/Legal = 5% of Construction Costs
- O&M
  - Only routine costs – no large-scale overhauls or replacements due to 20 yr planning period
- NPW
  - n=20 years i=2.75%
  - PW from O&M costs used the following:
    - $(P|A, i\%, n) = ((1+i)^n-1)/((i(1+i)^n)$

11

Alternatives Evaluation

Control Program 1 - Elimination of Outfall 006A

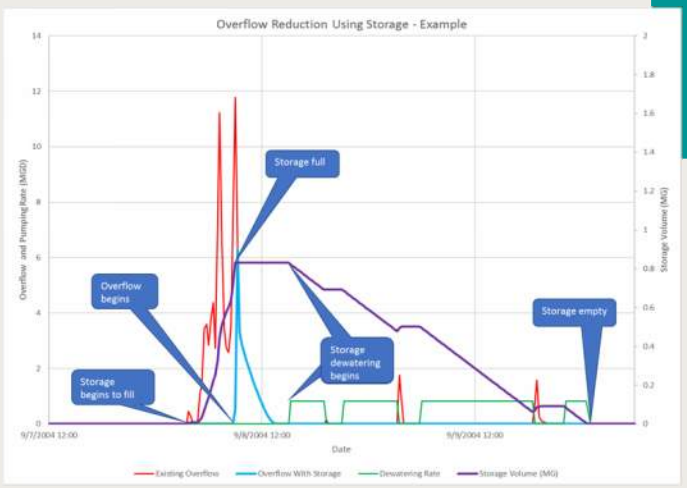
Small overflow volume at 006A

- Feasible to combine 005A and 006A, at low cost, to reduce burden on other alternatives
- Model shows additional upgrades required to the downstream system if 006A is eliminated
- Will require further review of the system to see if there is a cost-effective solution, i.e. diverting connected catchbasins to existing storm sewers.

Alternatives Evaluation

Storage – Tanks and Tunnels

Temporary storage tunnels and tanks reduce and delay overflows



13

Alternatives Evaluation

Control Program 2 - Consolidated Tank Storage

Tanks retain overflows and return them to sewer and WWTP

Consists of:

- Diversion structures with fine screens;
- Consolidation piping
- An offline below grade tank equipped with a flushing system and odor control;
- Tank overflow to an outfall;
- Dewatering pumping station; and
- Discharge connection back to the interceptor.

- 2 Consolidated Tanks for 001A & 002A and 003A-006A
- Consolidation - pros and cons to individual outfall storage
- Challenges of large-scale construction in an urban area

14

Alternatives Evaluation

Control Program 2 - Consolidated Tank Storage Contd.

15

Alternatives Evaluation

Control Program 2 - Consolidated Tank Storage

Tanks retain overflows and return them to sewer and WWTP

Control Program 2 - End of Pipe Storage (Consolidated Sites)					
Overflows per Year	0	4	8	12	20
Capital Cost ($ Million)	$73.8	$46.6	$45.4	$40.6	$29.1
O&M Cost ($ Million)	$0.7	$0.4	$0.4	$0.4	$0.3
Net Present Worth ($ Million)	$83.9	$53.9	$51.8	$46.6	$34.2

$34-$84 M (Class 5 Cost Estimate: -50%+100%)

$1.1-1.7/gal of CSO removed during typical year.

16

Alternatives Evaluation

Control Program 3 - Consolidated Tunnel Storage

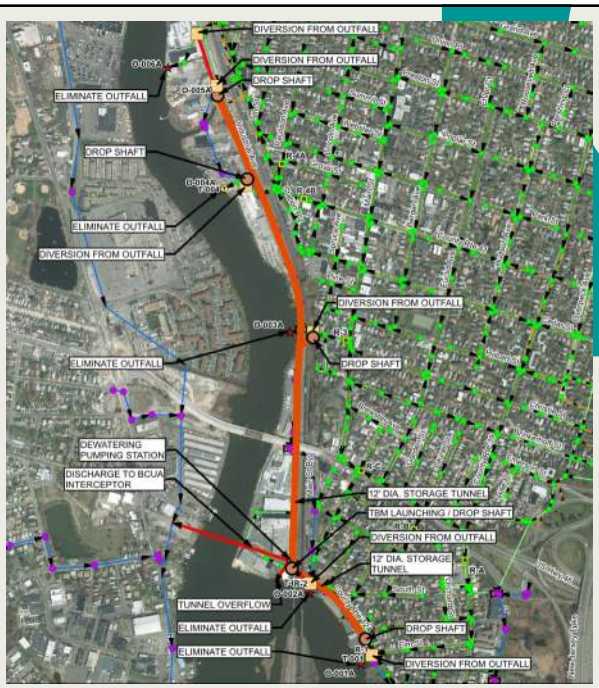
All outfalls will be consolidated into one, central tunnel

- Results in only one outfall near current 002A
- Consists of:
  - Consolidation piping from Outfall 006A
  - Diversion piping from each outfall
  - Control Gates
  - Drop shafts along Industrial Avenue and at intersection of 2nd Avenue, and Bergen Turnpike.
  - Deaeration chambers
  - A dewatering pumping station
  - Grit and screening facilities
  - Force main connection back to the BCUA Main Trunk Sewer.
  - A tunnel overflow with tide gate
- Issues are typical with large-scale urban construction, though tunnels introduce further complications
  - Mining and construction across the entire route
  - Complexity in tunnel management

17

Alternatives Evaluation

Control Program 3 – Consolidated Tunnel Storage Contd.



Consolidated Tunnel Map

18

Alternatives Evaluation

Control Program 3 - Consolidated Tunnel Storage

All outfalls will be consolidated into one, central tunnel

Control Program 3 - Tunnel					
Overflows per Year	0	4	8	12	20
Capital Cost ($ Million)	$88.4	$72.3	$72.3	$67.3	$62.3
O&M Cost ($ Million)	$2.0	$1.7	$1.7	$1.7	$1.6
Net Present Worth ($ Million)	$118.5	$98.6	$98.6	$92.5	$86.3

$86-$118 M (Class 5 Cost Estimate: -50%+100%)

$2.20-$2.40/gal of CSO removed during typical year.

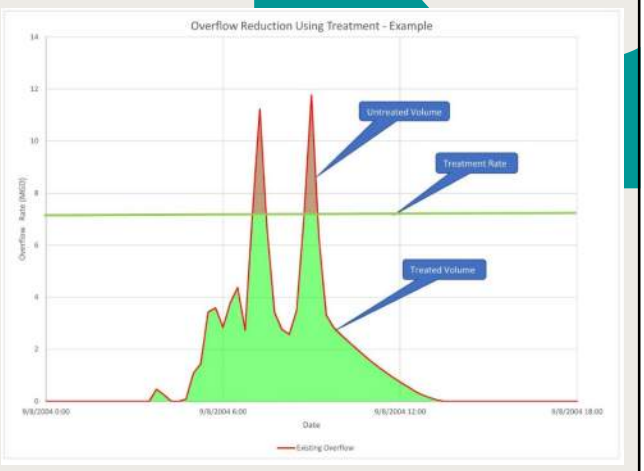
19

Alternatives Evaluation

Control Program 4 - Consolidated End of Pipe Treatment

Similar to EOP storage, but overflow is not returned to interceptor

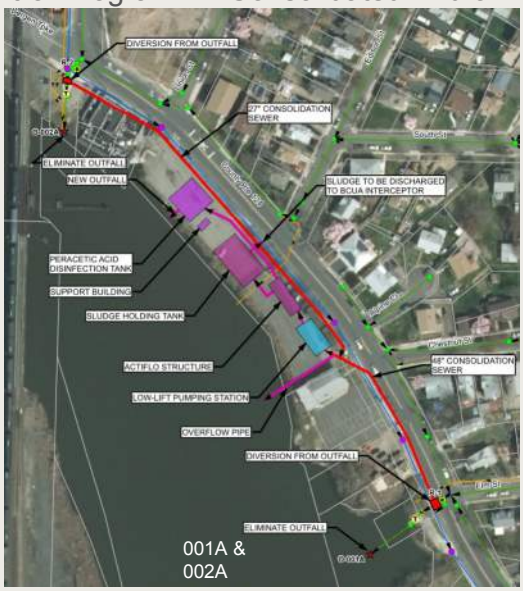
- Treatment capacity governed by flow, not volume like the storage tanks
- Treatment process:
  - Fine Screening for floatable and course particles
  - Pump Station
  - High-rate primary treatment (i.e. ActiFlo)
  - Disinfection by peracetic acid
  - Storage of underflow
- Similar pros and cons to consolidation as storage
- Large-scale urban construction

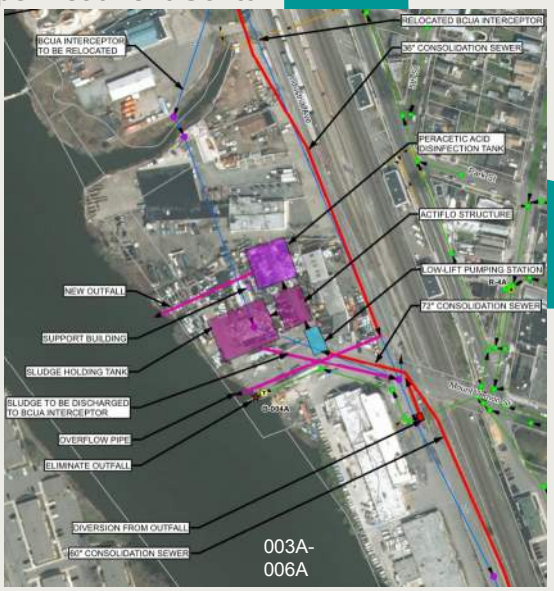


20

Alternatives Evaluation

Control Program 4 - Consolidated End of Pipe Treatment Contd.





Alternatives Evaluation

Control Program 4 - Consolidated End of Pipe Treatment

Control Program 4 - End of Pipe Treatment (Consolidated Sites)					
Overflows per Year	0	4	8	12	20
Capital Cost ($ Million)	$75.2	$65.8	$65.8	$65.5	$49.7
O&M Cost ($ Million)	$0.8	$0.7	$0.7	$0.7	$0.6
Net Present Worth ($ Million)	$87.3	$77.0	$77.0	$76.7	$59.5

$60-$87 M (Class 5 Cost Estimate: -50%+100%)

$1.30-$1.70/gal of CSO removed during typical year.

Alternatives Evaluation

Control Program 5 - Sewer Separation

Effectively removes the Village from being a CSO community

- Pros:
  - Work in public right-of-way; no new land needed
  - Opportunity for current system renewal and reconstruction
  - Elimination of outfalls
- Cons:
  - Highly disruptive to roads and traffic
  - Need to redirect every sanitary service connection on the street
  - Need for stormwater controls and treatment in the future
- Issues are general for large-scale construction in urban areas
- Pollutant loads (excepting some pathogens) to receiving water will increase 40%

23

Alternatives Evaluation

Control Program 5 - Sewer Separation

Effectively removes the Village from being a CSO community

$193M (Class 5 Cost Estimate: -50%+100%)

$3.8/gal of CSO removed during typical year

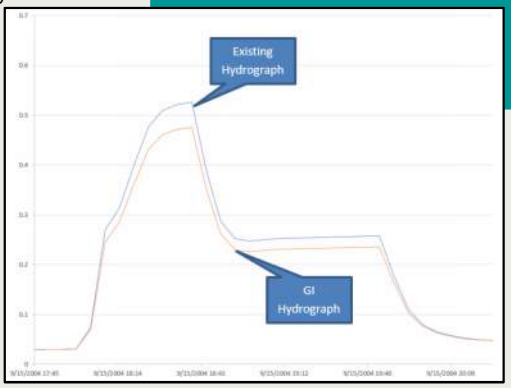
24

Alternatives Evaluation

Control Program 6 - Green Infrastructure

Distributed storage or detention throughout the village

- Bioswales selected as representative GI
  - Anticipated GI would consist largely of bioswales and permeable pavement
- Site suitability was a major issue
  - Land-use, impervious cover, hydrologic soil group (HSG), and publicly owned land
- Maximum of 4% of total impervious area directed to GI
- Minimal institutional/implementation issues



25

Alternatives Evaluation

Control Program 6 - Green Infrastructure

Distributed storage or detention throughout the village

$2.7-$12 M* (Class 5 Cost Estimate: -50%+100%)

$5.80 - $9.10/gal of CSO removed during typical year

*For controlling 2.5%-10% of Village impervious area with GI, estimated a maximum of 4% could be feasible controlled.

26

Performance

CSO Reduction

Table 8-1: Summary of CSO Volumes for Typical Year

Control Program	2015 Baseline (MG)	Level of Control - Overflows during Typical Year (MG)				
		0	4	8	12	20
1. Eliminate CSO-006A	50.3	NA	NA	NA	NA	NA
2. Consolidated Tank Storage	50.3	0.0	5.7	5.8	9.7	21.5
3. Tunnel	50.3	0.0	4.7	4.7	7.9	11.4
4. Consoldiated End of Pipe Treatment	50.3	0.0	0.2	0.2	0.2	3.0
5. Sewer Separation	50.3	0.0	NA	NA	NA	NA
% Impervious to GI		2.5%	5%	7.5%	10%	
6. Green Infrastructure	50.3	49.9	49.4	48.9	48.3	

Table 8-3: Summary of Frequency of Overflows for Typical Year

Control Program	2015 Baseline	Level of Control - Overflows during Typical Year				
		0	4	8	12	20
1. Eliminate CSO-006A	53	NA	NA	NA	NA	NA
2. Consolidated Tank Storage	53	0	4	4	10	20
3. Tunnel	53	0	4	4	7	10
4. Consoldiated End of Pipe Treatment	53	0	1	1	2	10
5. Sewer Separation	53	0	NA	NA	NA	NA
% Impervious to GI		2.5%	5%	7.5%	10%	
6. Green Infrastructure	53	53	53	53	53	

Table 8-4: Summary of Percent Capture Achieved by Each Control Program

Control Program	2015 Baseline	Level of Control - Overflows during Typical Year				
		0	4	8	12	20
1. Eliminate CSO-006A	69.5%	NA	NA	NA	NA	NA
2. Consolidated Tank Storage	69.5%	100.0%	96.5%	96.5%	94.1%	86.9%
3. Tunnel	69.5%	100.0%	97.2%	97.2%	95.2%	93.1%
4. Consoldiated End of Pipe Treatment	69.5%	100.0%	99.9%	99.9%	99.9%	98.2%
5. Sewer Separation	69.5%	100.0%	NA	NA	NA	NA
% Impervious to GI		2.5%	5%	7.5%	10%	
6. Green Infrastructure	69.5%	69.7%	70.0%	70.3%	70.7%	

27

Costing

NPW Calculations

Control Program	Cost per Gallon Volume CSO Reduction ($/gal)				
Level of Control	0	4	8	12	20
1) Eliminate Outfall 006	NA	NA	NA	NA	NA
2) Storage (Consolidated)	$1.7	$1.2	$1.2	$1.1	$1.2
3) Tunnel	$2.4	$2.2	$2.2	$2.2	$2.2
4) Treatment (Consolidated)	$1.7	$1.5	$1.5	$1.5	$1.3
5) Sewer Separation	$3.8	NA	NA	NA	NA
	Volume Reduction for Impervious Area Managed (MG)				
	2.50%	5%	7.50%	10%	
6) Green Infrastructure	$9.1	$7.2	$6.3	$5.8	

Control Program	NPW Summary - Overflows per Year ($M)				
Level of Control	0	4	8	12	20
1) Eliminate Outfall 006	NA	NA	NA	NA	NA
2) Storage (Consolidated)	$84	$54	$52	$47	$34
3) Tunnel	$118	$99	$99	$92	$86
4) Treatment (Consolidated)	$87	$77	$77	$77	$60
5) Sewer Separation	$193	NA	NA	NA	NA
	NPW Summary - % of Impervious Area Managed ($M)				
	2.50%	5%	7.50%	10%	
6) Green Infrastructure	$2.7	$6	$9	$12	

28

Alternatives Rating

Rating Procedure

Control Programs rated 1 (Worst) to 5 (Best) on several categories and a weighted average found

- Cost
  - Normalized by $/gallon
  - Based on 4 overflows per year and 5% GI
  - 25% weight
- CSO Reduction
  - Overall reduction of CSO volume in Typical Year
  - Reduction in CSO Events
  - 15% weight each
- Institutional Issues
  - Ranked according to possibility of permitting delaying project six (6) months or more
  - 15% weight
- Implementability
  - Ranked according to project being delayed by other factors for six (6) or more months
  - 15% weight
- Public acceptance
  - Ranked according to how we think the public would welcome and support the plan
  - 15% weight

29

Alternatives Rating

Ranking – **NO SELECTION MADE AT THIS PHASE!**

Control Program	Cost	CSO Volume Reduction	CSO Frequency Reduction	Institutional Issues	Implement-ability	Public Acceptance	Weighted Score
1. Eliminate CSO-006A	NA	NA	NA	NA	NA	NA	NA
2. Consolidated Tank Storage	4	5	5	4	3	3	4.0
3. Tunnel	3	5	5	4	2	2	3.5
4. Consoldiated End of Pipe Treatment	4	5	5	2	3	2	3.6
5. Sewer Separation	2	5	5	3	2	2	3.1
6. Green Infrastructure	1	1	1	5	4	5	2.7
Weighting	25%	15%	15%	15%	15%	15%	100%

30

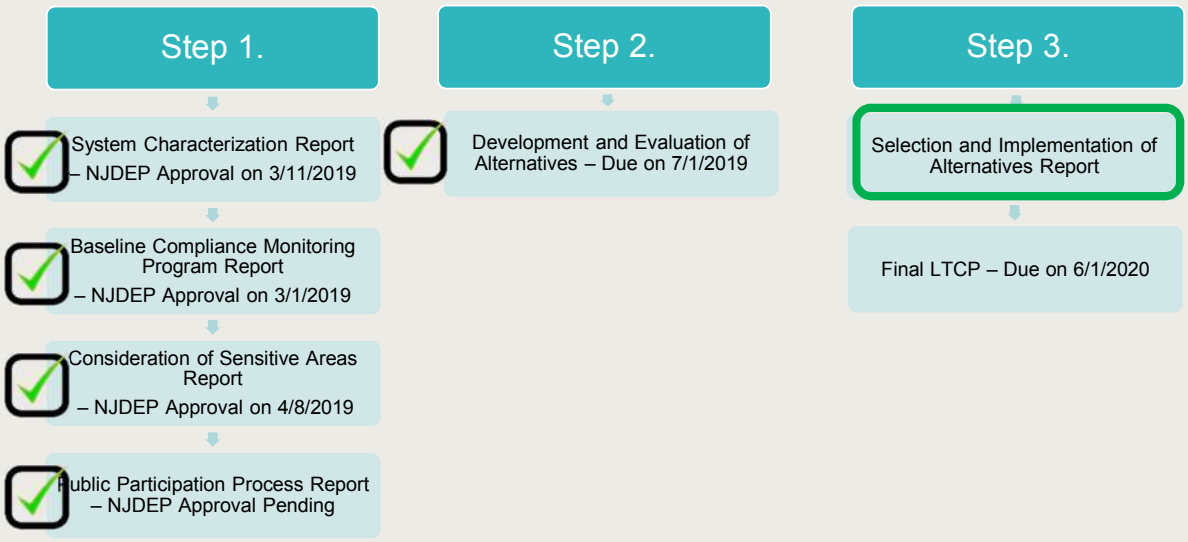
Public Participation Comment Letter

Proposed:

- Continue SCSO Team Meetings
- Seek additional SCSO Team Members
- Present to Commissioners – Oct 3rd
- Newsletter Article – Topics?
- Public and Community Group Meetings – Suggestions; groups, dates and content?
- Earth Day 2020

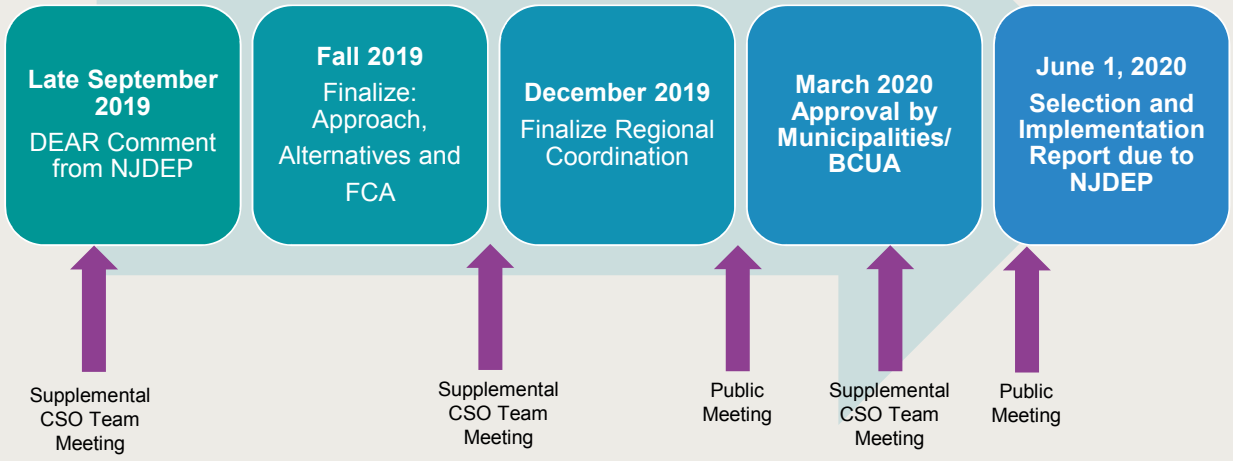
Ridgefield Park Supplemental CSO Team

Long term control plan submission and NJDEP review status



BCUA CSO Group Supplemental CSO Team

Upcoming Schedule



Final Questions?

Thank You?